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Effects of prenatal exposure to combined stress on memory retention of passive avoidance learning in rats

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Abstract

Background: Many studies have shown that prenatal stress affects development of fetal brain.
Objective: The aim of this study was to evaluate the effect of prenatal exposure to combined stress on memory retention of passive avoidance learning in rats.
Methods: This experimental study was performed on 16 male and 16 female Wistar rats in 2014. The rats were divided into four groups: male and female control groups, with natural pregnancy and two male and female treatment groups with exposure to combined stress (electromagnetic field, immobility and social stress) in the second and third weeks of embryonic development. The learning was evaluated using shuttle box setup. Data were analyzed using ANOVA and Tukey test.
Findings: The prenatal combined stress caused decrease in the latency time to enter the dark chamber in male and female new born rats in post-training periods especially the second week compared to the control groups.
Conclusion: With regards to the results, prenatal exposure to combined stress can reduce the memory retention of passive avoidance learning.

Keywords: Learning, Pregnancy, Memory, Rats
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